Extending The Navy's Global Reach By Optimizing Fuel Usage Tools: Optimized Transit Tool and Easy Reference (OTTER) and Fuel Usage Study Extended Demonstration (FUSED) [video]

Blackburn, Korban; Naylor, Brandon

Naval Postgraduate School, Monterey, California

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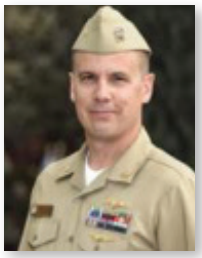
LCDR W. Korban Blackburn

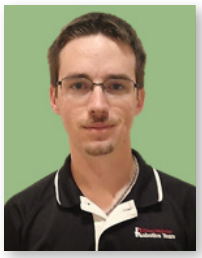
Operations Research Graduate, Supply Corps, United States Navy

Mr. Brandon Naylor

Research Engineering / Scientist Associate III, UT Austin



LCDR W. Korban Blackburn



Mr. Brandon Naylor

Abstract:

Fuel efficiency is a priority for the Chief of Naval Operations (CNO) as stated in the CNO's Position Report: 2014. While a number of fuel-saving measures have been implemented in recent years, the effects of operational transit speed on fuel consumption have not been realized. A ship commanding officer can use fuel-usage curves to determine the most efficient propulsion plant speed. If the required speed is anything other than optimum, ships do not consider alternatives. There often exists however, combinations of speeds that are more fuel efficient than this constant speed. OTTER produces two intuitive tools that take advantage of these optimal speeds. First created is a dynamic, versatile and interactive planning tool for any ship class transit including drill scheduling. Second, the generic optimized solution to individual ship transit speed combinations displayed on a paper reference sheet that can be used independently. These products yield significant savings with no operational impact on the fleet.

Policies and practices for surface ship operation have been established to minimize the risk to which ships are exposed, but these often involve operating in a way that reduces overall fuel efficiency. Lowered fuel efficiency introduces its own risks: ships are very vulnerable while refueling, while the need to refuel frequently reduces operational capability. FUSED can be used to model the fuel usage of the surface fleet while operating under different policy sets. The user can then see how different policy changes affect how often a ship or group needs to refuel. With this information, the user can make an informed decision when comparing the benefit of a new policy or practice against the expected risk.

LCDR W. Korban Blackburn Abridged Biography:

LCDR Blackburn has served in various key leadership positions afloat. Ashore, he served as the Immediate Supervisor In Charge and Department Head at Naval Submarine Support Center Bangor, where he provided logistic support, technical expertise and financial oversight of four staff commands and 19 Ballistic Missile Submarine and Guided Missile Submarine crews. His personal awards include the Navy and Marine Corps Commendation Medal (two stars), Navy and Marine Corps Achievement Medal and various personal and unit awards. He is qualified Submarine Supply Corps Officer, Surface Warfare Supply Corps Officer and Naval Aviation Supply Officer.

Brandon Naylor Abridged Biography:

Mr. Naylor began his association with the Energy Academic Group (EAG) as an NREIP intern in the summer of 2014. It was there that he created the original Fuel Usage Study Extended Demonstration (FUSED) model. Brandon holds a BS in Mechanical Engineering with a minor in Robotics from Rose-Hulman Institute of Technology.